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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/688,994
Filing Date: October 21, 2003
Appellant(s): YOSHIDA ET AL.

Leonidas Boutsikaris
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/3/2010 appealing from the Office action mailed 2/18/2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1 and 3-18.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN

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REJECTIONS.” New grounds of rejection (if any) are provided under the subheading “NEW GROUNDS OF REJECTION.”

Ground 1: Claims 1, 4-6, 14, 16-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080)

Ground 2: Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) as applied to claims 1, 4-6, 14, 16-17 and 20 above, in further in view of either Stein et al. (US Patent 5071491) or Yoshida et al. (JP2000-297509)

Ground 3: Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) as applied to claims 1, 4-6, 14, 16-17 and 20 above, in view of Kataoka et al. (US Patent 6320115)

Ground 4: Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) and further in view of Kataoka et al. (US Patent 6320115) as applied to claims 7 and 15 above, and further in view of Kirchmann et al. (US Patent 6073936)

Ground 5: Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) and further in view of Kataoka et al. (US Patent 6320115) and Kirchmann et al. (US Patent 6073936) as applied to claims 8-10 above, and further in view of Kotani et al. (US Patent 5414030).

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Ground 6: Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) as applied to claims 1, 4-6, 14, 16-17 and 20 above, and further in view of Stein et al. (US Patent 5071491).

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5509973	Ishikawa et al.	4-1996
3455080	Meadows	7-1969
5071491	Stein et al.	12-1991
6320115	Kataoka et al.	11-2001
6073936	Kirchmann et al.	6-2000
5414030	Kotani et al.	5-1995
JP 2000-297509	Yoshida et al.	10-2000

Definition of "integral" from Merriam-Webster Online dictionary

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1, 4-6, 14, 16-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080)

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Regarding claims 1, 4, 14, and 20, as seen in figures 1-7, Ishikawa et al. discloses a solar module having an edge face sealing member (see grading channel members 5 surrounding the solar cell panel 4 in Figures 2-3 and 5-6) for sealing between solar cell module body (e.g. solar cell battery panel 4) and frame body (e.g. frame 3 including upper, lower and vertical frame members 6, 7 and 8, see abstract and Figures 4-5) when the solar cell module body is captured within the frame body (see Figure 5). The edge face sealing member is an integral frame-like shape (see grading channel members 5 in Figure 5) is formed along an outer shape of the solar cell module body (e.g. the integral frame-like shape grading channel members 5 wrap around the solar cell module 4 as seen in Figure 5). The edge face sealing member (e.g. grading channel members 5) is substantially C-shaped in cross section or substantially U-shaped in cross section (See grading channel members 5 in Figures 2-3 and 6). The edge face sealing member (e.g. grading channel members 5) comprises an upper sealing region (e.g. upper side wall portion 10 of the grading channel members 5) abutting front surface of the solar cell module body; a lower sealing region (e.g. lower side wall portion 10 of the grading channel members 5) abutting back surface of the solar cell module body; a side sealing region (e.g. head portion 11 of the grading channel members 5) abutting edge faces of the solar cell module body. The upper sealing and the lower sealing regions of Ishikawa et al.'s edge face sealing member are disposed so as to open to the outside therefrom at either side from edge portions of the side sealing region (see Figures 1-3 and 6). Ishikawa et al. also discloses tip portions of the upper sealing region and the lower sealing region (or inner wall portions 9) are formed in a bent fashion so as to be inclined toward a groove recess, wherein the distance between the tip portions is substantially the same as a thickness of the edge portion of the solar cell module body (see figures 1-3, 5-6). Ishikawa et al.

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also teaches the frame (6, 7 and 8) mounted on the grading channel 5 (or edge face sealing member as seen in figure 5, col. 4 lines 13-22, 55-61), inner surfaces of the upper and lower sealing regions (or side wall portions 10) facing each other, and a pair of tongue portions (or one projection from each inner surface of the upper and lower side wall portions 10 - upper and lower sealing regions - See Figures 1-6, col. 4 lines 29-32) extending inwardly, wherein the grading channel members 5 (or the edge face sealing member) is fitted on the solar battery 4 (or solar module body) by having its inner surface of the head portion 11 (or edge sealing portion) in contact with the edge of the solar battery 4, inner wall portion 9 held pushed against and in close contact with solar battery 4, and tongues 12 are elastically deformed to have close contact with the solar battery 4 (see col. 4 lines 44-54). While showing the tip portions and projections of the edge face sealing member in Figures 1-3, Ishikawa et al. does not specifically disclose an intimate contact of the solar cell module and the edge face sealing member. However, in addition to the teaching of tongues 12 being elastically deformed, and having their edges (e.g. edges of the tongues) in close contact with the solar battery 4 (See col. 4 lines 51-54), Ishikawa et al. also shows there is substantially no gap between the upper and lower sealing regions of the edge face sealing member (or the upper and lower side wall portion of the grading channel members 5) and the solar cell body 4 as seen in figures 6-7, or the edge face sealing member is in intimate contact with the solar cell module body; therefore it would have been obvious to one skilled in the art at the time the invention was made to modify the frame body of the solar cell module of Ishikawa et al so that when the edge face sealing member is captured by the groove of the frame body, the upper sealing region and the lower sealing region are pressed against the solar cell module and coming in intimate contact with the front and back surface of the solar cell module, and the

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sealing completely seals the solar cell module body with substantially no gap between one or more upper and lower sealing regions of the edge face sealing member and the one or more front and back surfaces of at least one of the solar cell module body or bodies, respectively, as shown in Figure 6, because such is clearly within the scope of Ishikawa et al.'s disclosure.

Regarding claim 5, Ishikawa et al. teaches the projections (or tongues) comprises one single-rib. (See Figures 1-3)

Regarding claim 6, Ishikawa et al. teaches the tip portions of the lower and upper sealing regions are disposed in inclined fashion at respectively facing sealing region surfaces. (See Figures 1-3)

Regarding claims 16-17, Ishikawa et al. teaches the edge portions of the side sealing region are curved, cut diagonally so as to produce chamfered surfaces. (See Figures 1-3).

The difference between Ishikawa et al. and instant claims is that Ishikawa et al. does not explicitly teach having the frame-like edge face sealing member (e.g. the grading channel members 5) sealing the entire edge portion perimeter of the solar cell module body (e.g. the rectangular panel-shape solar battery 4).

Meadows teaches a frame-like member (e.g. frame member) having lips or ribs (e.g. tip portions and projections) to provide sealing the entire edge portion perimeter of a rectangular panel-shape body (e.g. glass pane 27, see Figures 1-4).

It would have been obvious to one skilled in the art at the time the invention was made to have the edge face sealing member (or the grading channel members 5) of Ishikawa et al. sealing the entire edge portion perimeter of the solar cell module body (e.g. rectangular panel shape body) as taught by Meadows, because Meadows teaches such sealing could be readily applied

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to the panel members and prevent the entrance of foreign substances such as air, water, or other fluid (See col. 1 lines 33-42, col. 3 lines 27-39). Such modification would have involved a mere substitution of known equivalent structures (sealing versus a sealing entire perimeter). A substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art.

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) as applied to claims 1, 4-6, 14, 16-17 and 20 above, in further in view of either Stein et al. (US Patent 5071491) or Yoshida et al. (JP2000-297509)

Regarding claim 3, modified Ishikawa et al. teaches an edge face sealing member as set forth above.

Modified Ishikawa et al. does not teach lower sealing region is longer than upper sealing region.

Stein et al. teaches an edge face sealing member with a lower sealing region (or lower seal 26 as seen in figure 7) being longer than an upper sealing region (or upper seal 26 as seen in figure 7). It would have been obvious to one skilled in the art at the time the invention was made to modify the edge face sealing member of modified Ishikawa et al. by having a lower sealing region longer than the upper sealing region as taught by Stein et al., because Stein et al. teaches such known frame with seal would increase mechanical stability, protection against moisture and provide local fastening of the solar cell equipment (see col. 1 lines 9-15 of Stein et al.)

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Yoshida et al. teaches an edge face sealing member (28 in figure 4) having a lower sealing region (or the lower horizontal portion of resin 28) being longer than an upper sealing region (or the upper horizontal portion of resin 28). It would have been obvious to one skilled in the art at the time the invention was made to modify the edge face sealing member of modified Ishikawa et al. by having a lower sealing region longer than the upper sealing region as taught by Yoshida et al., because Yoshida et al. teaches such seal (or resin 28) would improve waterproofness (See paragraph 0024 of Yoshida et al.).

3. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) as applied to claims 1, 4-6, 14, 16-17 and 20 above, in view of Kataoka et al. (US Patent 6320115)

Regarding claims 7 and 15, modified Ishikawa et al. teaches a solar cell module having an edge face sealing member as set forth above.

Modified Ishikawa et al. does not specifically teach a solar cell module body comprising one or more light receiving front glass surfaces, one or more light-receiving-surface sealing resin layer comprising ethylene vinyl acetate, one or more solar cells, one or more back-surface sealing resin layers comprising ethylene vinyl acetate, and one or more weather resistant back-surface sealing films.

Kataoka et al. teaches that it is well known to have a solar cell module body (or solar cell module) comprising a light receiving front glass surface (103), one or more solar cells (or a photovoltaic element 101), sealing resin layers (102) of EVA (or ethylene vinyl acetate) covering

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light-receiving surface and back-surface of the photovoltaic element, a weather resistant back-surface sealing film (104). See figure 1 and col. 1 line 35 through col. 2 line 14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the solar cell module body as taught by Kataoka et al. into the solar cell module of modified Ishikawa et al., because Kataoka et al. teaches that the front glass surface (103) and the back surface sealing (104) would be protective layers, sealing resin (102) which is inexpensive and easy to handle would be used to prevent damaging of the photovoltaic element (101). (See col. 1 line 35 through col. 2 line 15)

4. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) and further in view of Kataoka et al. (US Patent 6320115) as applied to claims 7 and 15 above, and further in view of Kirchmann et al. (US Patent 6073936)

Regarding claims 8-10, modified Ishikawa et al. discloses a solar cell module edge face sealing member as described in claim 7, wherein Ishikawa et al. teaches the edge face sealing member (or grading channel members 5) having elasticity (or elastically deformed – see col. 4 lines 22-32 and 44-54).

Modified Ishikawa et al. does not specifically teach that the material making up the edge face sealing member is elastomer resin; polypropylene or polystyrenic resins; or PP-EPDM or polystyrene-isoprene copolymer.

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Kirchmann et al. teaches a sealing member made of SIS (e.g. an elastomer resin of polystyrene-isoprene blend), or EPDM/PP (an elastomer resin of polypropylenic resin). See col. 4 lines 4-16 or Kirchmann et al.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the edge face sealing member of modified Ishikawa et al. by using SIS or PP-EDPM as the sealing material as taught by Kirchmann et al.; because Kirchmann et al. teaches that it would provide a sealing with flexibility or elastic characteristic (See col. 3 lines 3-5 and col. 4 lines 4-16 of Kirchmann et al., and Ishikawa et al. suggests using material having elastic characteristic (See col. 4 lines 22-32 and 44-54 of Ishikawa et al.)

5. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) and further in view of Kataoka et al. (US Patent 6320115) and Kirchmann et al. (US Patent 6073936) as applied to claims 8-10 above, and further in view of Kotani et al. (US Patent 5414030).

Regarding claims 11-13, modified Ishikawa et al. discloses an edge face sealing member as described in claim 9.

Modified Ishikawa et al. does not teach using additive such as magnesium silicate or ultraviolet-resistant agents.

Kotani et al. teaches using magnesium silicate to an elastomeric resin. (See col. 14 lines 39-68). Kotani et al. also teaches using ultraviolet absorbers, or an ultraviolet-resistant agent to an elastomeric resin. (See col. 11 lines 36-43 and col. 13 lines 22-31).

It would have been obvious to one skilled in the art at the time the invention was made to modify the member of modified Ishikawa et al. by adding additives such as magnesium silicate and ultraviolet-resistant agent as taught by Kotani et al., because Kotani et al. teaches such additive and agent would improve weather resistance (See col. 13 lines 22-31 of Kotani et al.)

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080) as applied to claims 1, 4-6, 14, 16-17 and 20 above, and further in view of Stein et al. (US Patent 5071491).

Regarding claim 18, modified Ishikawa et al. teaches a solar cell module edge face sealing member as set forth above, wherein a pair of tongues extending inwardly from an interior surface of side wall portions 10.

The difference between modified Ishikawa et al. and instant claim is the requirement of the tip portions extending further inwardly than the projections (or tongues) from an interior surface of each of the upper sealing region and the lower sealing region.

Stein et al. teaches the tip portions of upper and lower seal 26 extending further than the other projections (See Figure 7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sealing of modified Ishikawa et al. by having the tip portions extending inwardly further than the projections as taught by Stein et al., because it would provide a frame that can serve as edge protection, local fastening, mechanical stability, and protection against moisture for solar cell equipment. (See col. 1 lines 9-15).

(10) Response to Argument

Appellant's arguments filed in the Appeal Brief dated

(I) Claims 1 and 14 are unpatentable under 35 U.S.C. 103(a) over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080)

Appellant cites *In re Piasecki* and *In re Fine* for the burden of USPTO to establish a prima facie case of obviousness and combination of relevant teachings of the references to arrive at the claimed invention under 35 U.S.C. 103(a), and also cites *In re Jones* and *KSR Int'l Co. v. Teleflex Inc.* for proper combination of references under 35 U.S.C. 103(a). The Examiner has considered the case law cited by Appellant and maintains the rejection of claims 1 and 14 over Ishikawa et al. in view of Meadows is proper.

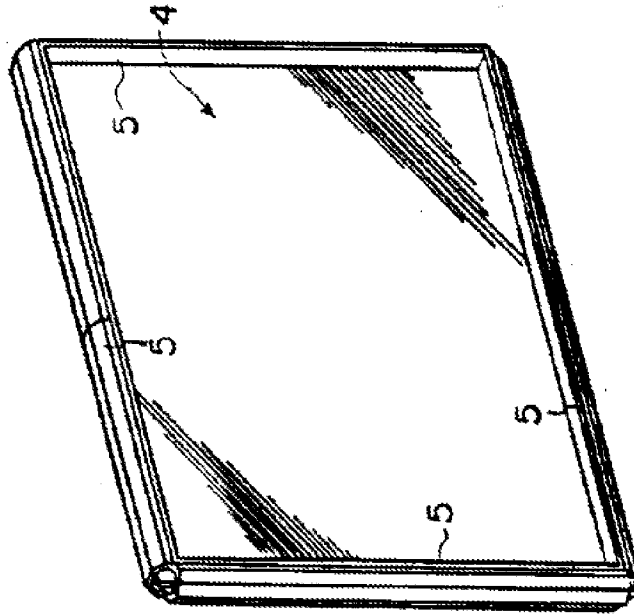
Appellant argues that Ishikawa/Meadows does not teach or suggest an edge face sealing member that comprises a single member having a frame-like shape (emphasis added). Appellant argues that Ishikawa's edge face sealing member consists of separate members, while the claimed integral frame-like shape edge face sealing is one member or being preformed in the frame-like shape of one member. Appellant argues that the line at each corner of Figure 1 is for depicting a plurality of surfaces intersected in three-dimensional space and the line does not represent four separate sections. Appellant argues that the definition provided by the Examiner defines "integral" as essential to completeness or lacking nothing essential, and such definition indicates "integral" is one member. Appellant argues that the edge face sealing member of the claimed invention consists of one member and "integral" is utilized as a word to represent it as it is repeatedly recited in the specification, and such a description is in paragraph [0061].

These arguments are not deemed to be persuasive for the following reasons. Ishikawa et al. in view of Meadows teaches the claimed edge face sealing member (claim 1) or the solar cell module (claim 14) comprising such edge face sealing member as Ishikawa et al. teaches an edge face sealing member of solar cell module for sealing a gap between a solar module body (see grading channel 5 surrounding the solar cell panel 4 in figures 2-3 and 5-6 of Ishikawa et al.) and a frame body (see frame including upper, lower and vertical frame members 6, 7 and 8 in Figures 4-5 of Ishikawa et al.) when the solar cell module body (e.g. 4) is captured within the frame body:

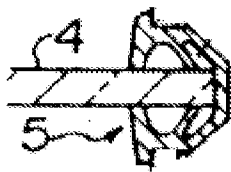
- the edge face sealing member disclosed by Ishikawa itself, which is an integral frame-like shape, is formed along with an outer shape of the solar cell module body (see Figure 5, below is a part of Figure 5 with the frame is taken away to show the edge face sealing member, e.g. 5, which is an integral frame-like shape,

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formed along with an outer shape of the solar cell module body, e.g. 4)



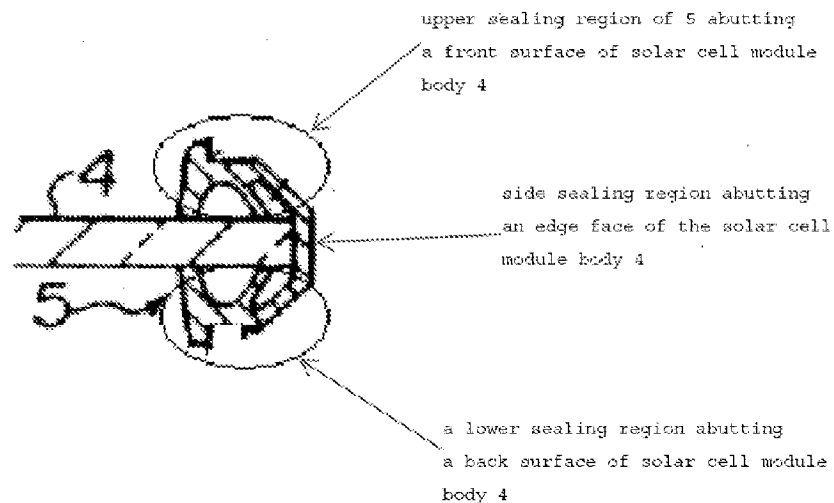
- the edge face sealing member is substantially C-shaped in cross section and/or substantially U-shaped in cross section (see the cross section of grading channel 5 of Ishikawa et al. in Figures 2-3 and 6, below is an example of the cross section of grading channel 5 disclosed by Ishikawa et al. to show that the grading channel 5 is substantially C-shaped and/or U-shaped in cross section);



- the edge face sealing member (see the figure of the grading channel 5 of Ishikawa et al. below with labels for demonstration) comprises:

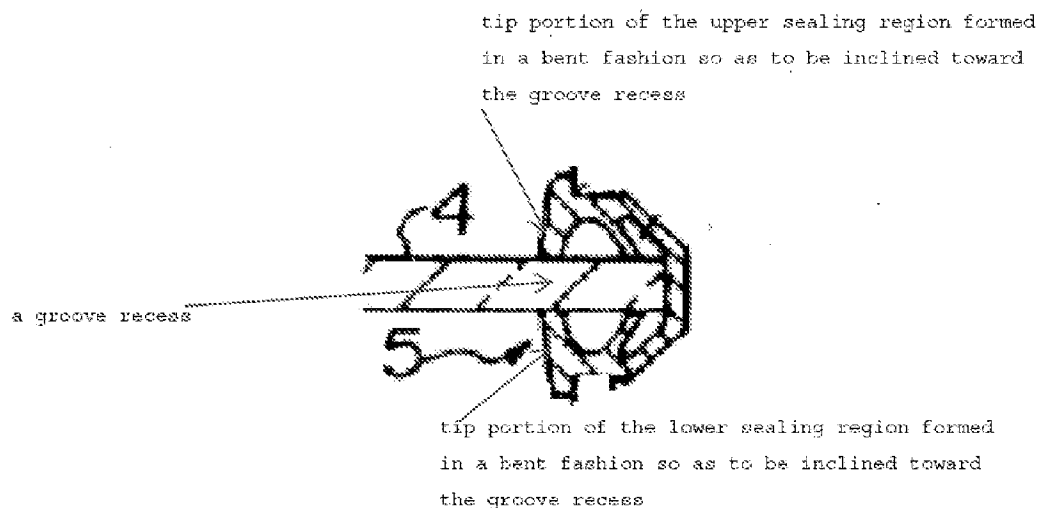
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- an upper sealing region abutting a front surface of the solar cell module body;
- a lower sealing region abutting a back surface of the solar cell module body; and
- a side sealing region abutting an edge face of the solar cell module body;
- the upper sealing region and the lower sealing region being disposed so as to open to the outside therefrom at either side from edge portions of the sealing region (see the arrangement of the upper, lower and side sealing regions in the figure below);



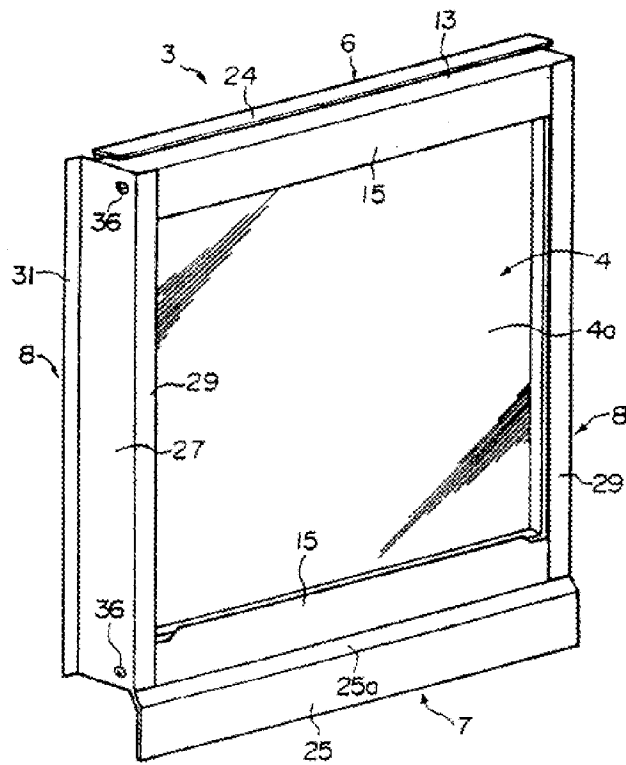
- wherein tip portions of the upper sealing region and the lower sealing region are formed in a bent fashion so as to be inclined toward a groove recess, and wherein a distance between the tip portions is substantially the same as a thickness of the edge portion of the solar cell module body (see the Figure below with labels for demonstration)

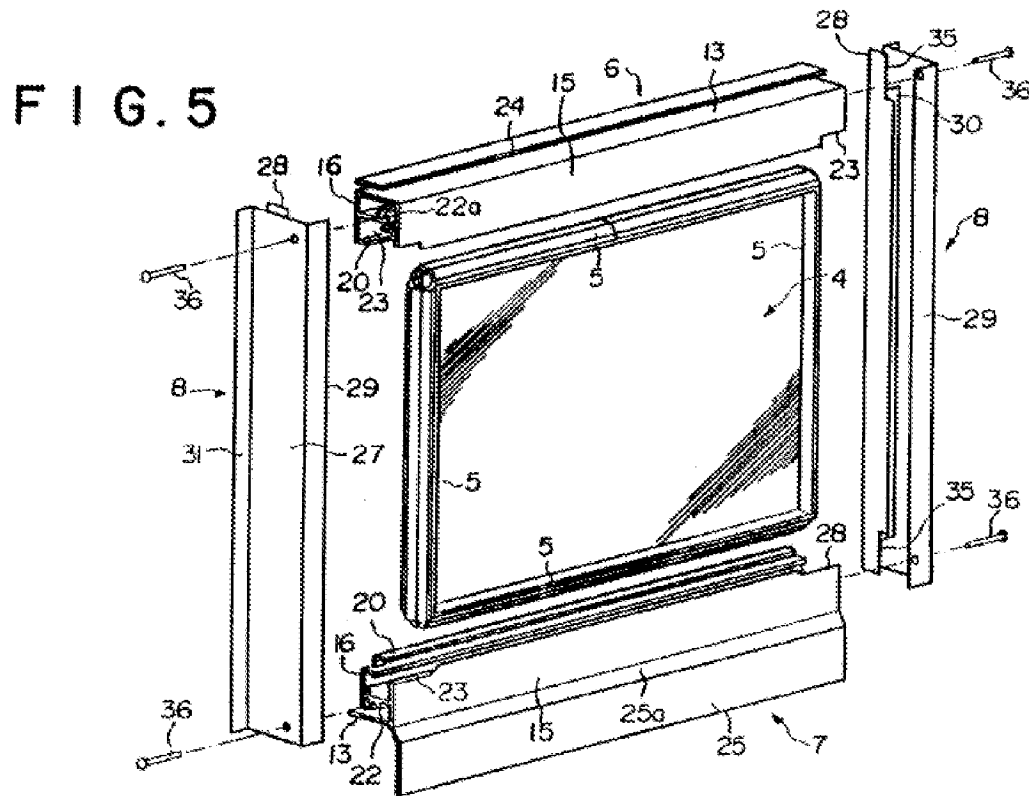
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- wherein when the edge face sealing member (e.g. 5) is captured within the frame body (e.g. 6-8) while the solar cell module body (e.g. 4) is captured within the edge face sealing member (e.g. 5, see figures 4-5 below, where figure 5 is the exploded view of figure 4), the upper sealing region, the lower sealing region and the side sealing region are coming into intimate contact with the solar cell module body (see the upper sealing region, lower sealing region and the side sealing region contact the solar cell module 4 in Figures with labels above).

FIG. 4



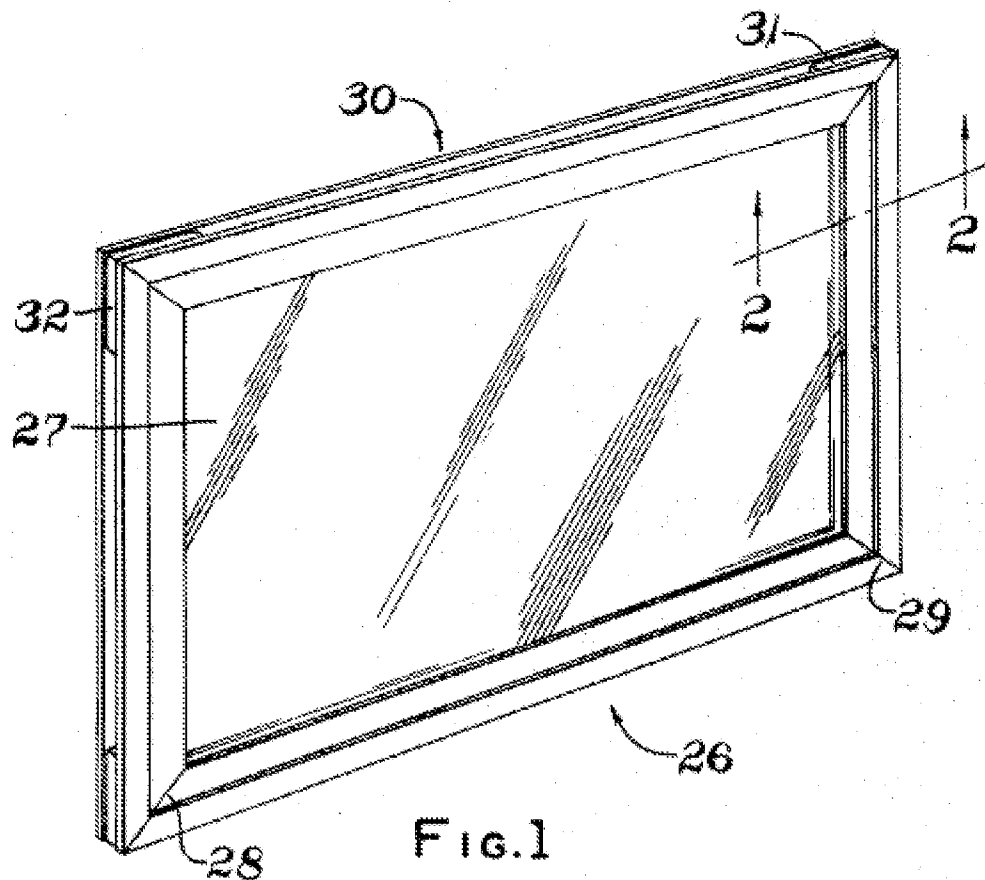


Ishikawa et al. does not disclose the solar cell module body is captured within the edge face sealing member along the entire edge portion perimeter thereof, or the edge face sealing member seals the entire edge portion perimeter of the solar cell module. (Because the grading channel 5 disclosed in Ishikawa et al. has an opening at the corner as seen in Figure 5).

However, Meadows teaches an edge face sealing (see extrusion 10 surrounding a panel 27 in Figures 1-2, 4) having a integral frame-like shape (see Figures 1-2 and 4) capturing a panel (see pane 27 in figures 1-2 and 4) along the entire edge portion perimeter, or the edge face sealing member seals the entire edge portion of the panel to prevent entrance of foreign substances such as air, water or other fluids (see Figures 1-4, col. 1 lines 33-42, col. 3 lines 27-

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39, only Figure 1 is attached below for demonstration). That is Meadows teaches an edge face sealing member having closed corners.



It would have been obvious to one skilled in the art at the time the invention was made to modify the edge face sealing member or the solar cell module comprising such member of Ishikawa et al. by having the sealing member sealing the entire edge portion parameter of the solar cell module body (e.g. rectangular panel shape body) as taught by Meadows (e.g. the edge face sealing member having closed corners), because Meadows teaches such sealing could be readily to applied to the panel members (e.g. solar cell module body) and prevent the entrance of

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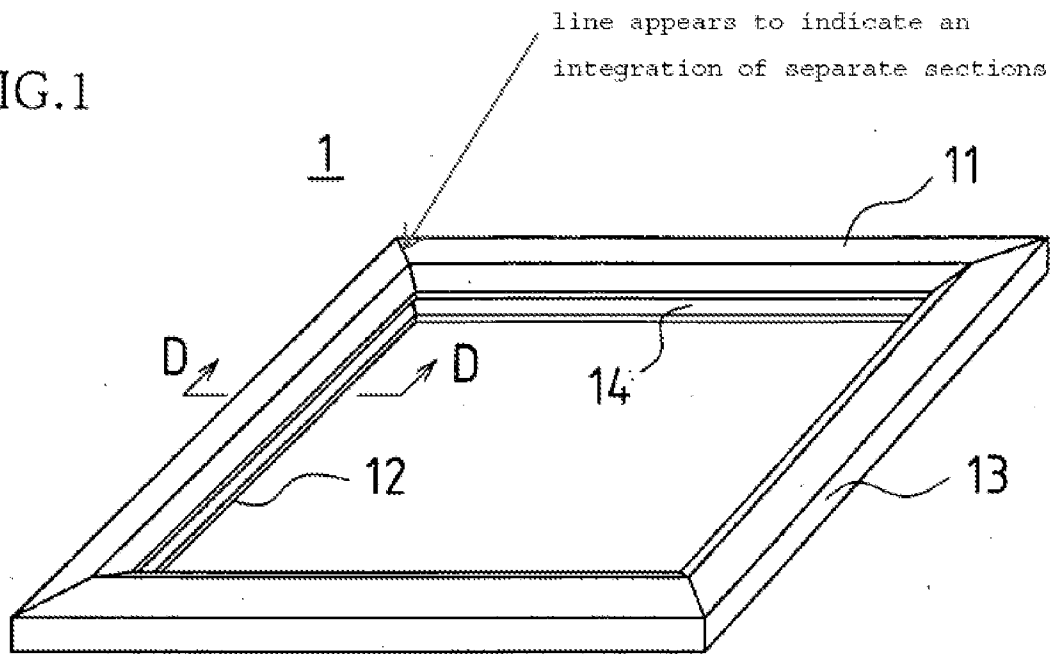
foreign substances such as air, water and other fluids (see col. 1 lines 33-42, col. 3 lines 27-39 of Meadows). Such modification would have involved a mere substitution of known equivalent structures (sealing perimeter of the solar cell module versus sealing the entire perimeter such as including the edge of each corner). Such substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art.

Claims 1 and 14 do not recite an edge face sealing member that comprises a single member having a frame-like shape (emphasis added). Both claims 1 and 14 recite “the edge face sealing member itself, which is an integral frame-like shape” and nothing in the claims recite the edge face sealing member is a single member, single-piece or one member without being composed of different parts. Appellant redefines the term “integral” as being one single member one single-piece but did not specifically disclose such definition in the originally filed disclosure. The closest definition of “integral” or more specifically “integral frame-like shape” is found in Figure 1 and the description in paragraph [0004]. In Figure 1, Appellant discloses an edge face sealing with lines at each corner of the integral frame-like edge face sealing member (see Figure 1 disclosed by Appellant below). The lines at each corner appear to indicate the “integral frame-

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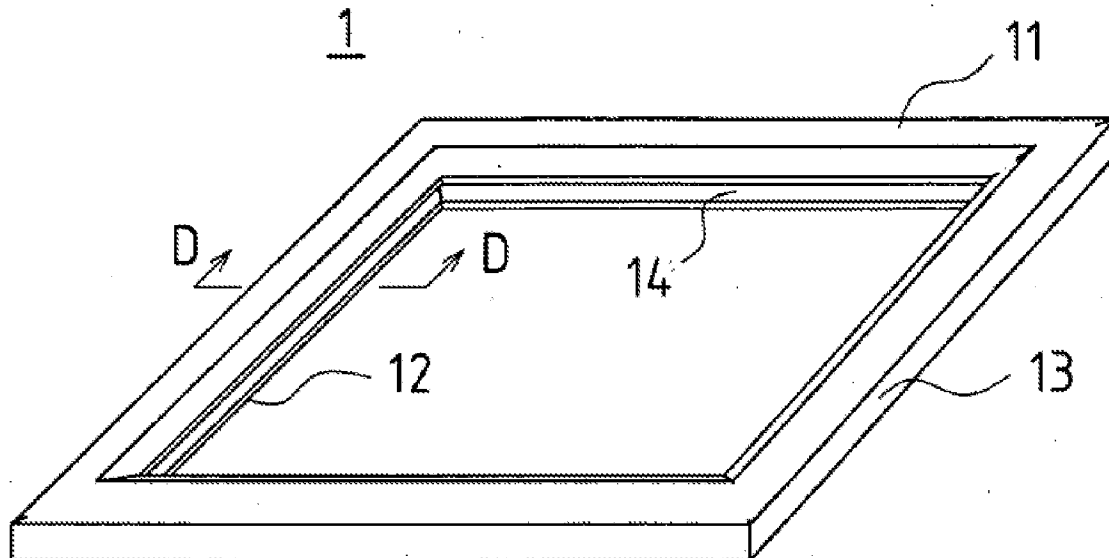
like shape" is formed of separate parts.

FIG.1



To depict a picture in three-dimensional space, there is no need to draw a line at the corner unless it indicates something else (see the demonstration of Figure 1 without the lines at each corner below)

FIG.1



In paragraph 0004, Appellant describes:

“As shown in FIGS. 6 and 8 (the latter being an oblique exploded view of region II in FIG. 6), frame body 5 – which retains the four sides of the foregoing solar cell module body 4 – comprises upper frame element(s) 51, lower frame element(s) 52, and pair(s) of left and right side edge frame elements 53 and 54, these frame elements 51, 52, 53, and 54 being assembled together in integral fashion to form a frame-like structure.”

(emphasis added).

That is, in Appellant’s own description, “integral” or more specifically “integral frame-like shape” is referred to as being composed of parts, and NOT referred to as being one single member, one single-piece. Accordingly, the Examiner has interpreted “integral” as being composed of parts, which is consistent with Appellant’s description and the definition #2 of “integral” (see the definition of “integral” provided by the Examiner).

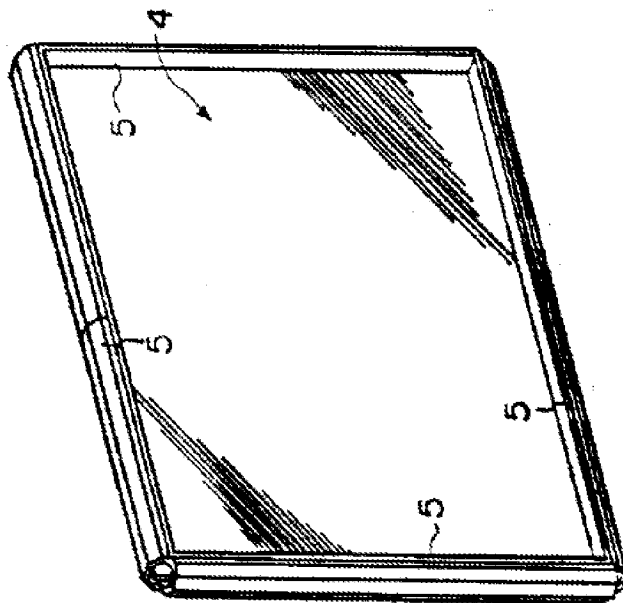
Paragraph [0061] recites:

“As described above, one or more embodiments of the present invention is or are predicated upon a solar cell module construction which is such that one or more solar cell module bodies are captured within one or more frame bodies. In addition, a structure may be adopted such that one or more edge face sealing members, frame-like in shape and formed in more or less parallel fashion with respect to one or more outer shapes of solar cell module body or bodies, is or are prepared; such edge face sealing member or members capturing at least one of the solar cell module body or bodies along substantially the entire edge portion perimeter thereof, and with these in this state, these being captured within at least one of the frame body or bodies. Because a construction is thus adopted in which frame-shaped, integral-type edge face sealing member(s) capture solar cell module body or bodies along substantially the entire edge portion perimeter thereof, definitive sealing of solar cell module body or bodies is permitted, permitting definitive prevention of entry by water. Furthermore, because edge face sealing member(s) which is or are c-shaped and/or u-shaped in cross-section is or are made to capture solar cell module body or bodies, and while in this state, these are then caused to be captured by frame body or bodies, it is possible to rest assured that edge face sealing member(s) will not slip when caused to be captured by frame body or bodies, and moreover, ease of operations with respect to the capturing step is improved.”

The description in paragraph [0061] merely describes the edge face sealing member(s) is/are prepared to capture the solar module body/bodies and to be captured by the frame body/bodies. In other words, paragraph [0061] describes the edge face sealing member(s) being arranged between the solar module body/bodies and the frame body/bodies. There is nothing in paragraph [0061] distinctively describing the edge face sealing member being one single member or one single-piece and NOT being composed of parts.

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Appellant argues the object disclosed in Ishikawa (e.g. 5) is shaped as a linear member and is not shaped as a frame as claimed. However, the Examiner respectfully disagrees. The object disclosed in Ishikawa is shaped as a frame (see Figure 5 of Ishikawa, and below is a part of Figure 5 with the frame being taken away to show the object (e.g. 5) in Ishikawa is shaped as a frame enclosing the solar cell module 4)



Appellant argues the member 10 in Meadows is merely a frame which has to cover the entire periphery of the enclosed glass pane, but one of ordinary skill in the art would not have looked at the shape of a frame to modify the shape of an edge face sealing member that is fitted inside the frame. Appellant also argues Meadows teaches covering the entire perimeter of a panel but does not teach covering the entire perimeter with a single-piece edge face sealing member so that the combination of Ishikawa and Meadows does not teach or suggest the claimed feature of a single-piece edge face sealing member. However, the Examiner respectfully disagrees. Even

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though Meadows refers to member 10 as a frame, but the frame in Meadows is used as a seal around a panel to prevent entrance of air, water or other fluids (see col. 1 lines 33-42, col. 3 lines 27-39 of Meadows). Therefore, the frame of Meadows is also an edge face sealing member and one would have a reasonable expectation of success from the combination. Meadows is relied upon for teaching a sealing member have closed corners or rearrange the parts of the edge face sealing member so that the edge face sealing member captures the entire perimeter of a panel such as the solar cell module body. Meadows is NOT relied on teaching the edge face sealing member that is fitted inside the frame; Ishikawa et al. already teaches such arrangement. In regards to the argument of the edge face sealing member being one single-piece, as explained above, Appellant redefines the definition of the word “integral” being one single-piece and NOT being composed of different parts to which Appellant does not have support nor include such claim language in the claims. The Examiner has interpreted the word “integral” or “integral frame-like shape” in a context closest to Appellant’s description and in a context fitted the most for the instant claim language (see the explanation above).

Appellant also argues that even though Figs. 6 and 7 in Ishikawa appear to show that the tongues of the members 5 are completely flatten, there is no pressure to cause the tongues to completely flatten as shown in Figure 3. However, the argument is not deemed to be persuasive. Causing the tongues of the members 5 completely flatten is deemed to be the intended use for the edge face sealing member. Ishikawa et al. teaches the members 5 are flexible, elastically deformed so that the edges are in close contact with the solar cell module body (or the solar cell battery, see col. 4 lines 13-54). Ishikawa et al. also depicts in Figs. 6-7, the tongues of members 5 are completely flatten. Regardless what causes the tongues of members 5 to be flattened, either

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by pressure or something else, Ishikawa et al. still teaches the claimed limitation of the sealing regions (e.g. upper, lower and side) coming into intimate contact with the solar cell module (see Figures 1-3 and 6-7 of Ishikawa et al.).

Appellant argues that the distinct advantageous effects because the edge face sealing member itself is preformed in the frame-like shape of one member and there are no gaps at the corner portions are the definitive sealing of the solar cell module body or bodies is permitted, permitting definitive prevention of entry by water. Appellant concludes that in order for the claimed edge face sealing member to have such advantageous effects, the edge face sealing member is clearly preformed in the frame-like shape of one member. Appellant further argues the claimed feature is not the prevention of entrance of foreign substances (e.g. air, water and fluids) but the edge face sealing member being a single member. However, Appellant's arguments are deemed to be contradictory. Again, as explained above, Appellant has no support or any description in the originally filed disclosure for redefining the term "integral" or phrase "integral frame-like shape" being a single member. Meadows teaches using an edge face sealing member with no gaps at the corner portion to prevent the entrance of foreign substance such as air, water and other fluids (see Figures 1-4, col. 1 lines 33-42, col. 3 lines 27-39). It would have been obvious to one skilled in the art at the time the invention was made to modify the edge face sealing member or the solar cell module comprising such sealing member of Ishikawa et al. by having the sealing member with closed corners as taught by Meadows so that the solar cell module body is captured within the edge face sealing member along the entire edge portion perimeter thereof, or the edge face sealing member seals the entire edge portion perimeter of the solar cell module, because Meadows teaches such sealing could be readily to applied to the panel

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members (e.g. solar cell module body) and prevent the entrance of foreign substances such as air, water and other fluids (see col. 1 lines 33-42, col. 3 lines 27-39 of Meadows).

(II) Claims 4-6 and 16-17 are unpatentable under 35 U.S.C. 103(a) over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080)

Appellant argues claims 4-6 and 16-17 are in condition for allowance because claim 1 is in condition for allowance. However, Appellant's argument is not deemed to be persuasive. Claim 1 is unpatentable under 35 U.S.C. 103(a) for the reason as explained above.

(III) Claim 3 is unpatentable under 35 U.S.C. 103(a) over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080), and further in view of either Stein et al. (US Patent 5071491) or Yoshida et al. (JP 2000-297509)

Appellant argues claim 3 is in condition for allowance because claim 1 is in condition for allowance. However, Appellant's argument is not deemed to be persuasive. Claim 1 is unpatentable under 35 U.S.C. 103(a) for the reason as explained above.

(I) Claims 7 and 15 are unpatentable under 35 U.S.C. 103(a) over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080), and further in view of Kataoka et al. (US Patent 6320115)

Appellant argues claims 7 and 15 are in condition for allowance because claims 1 and 14 are in condition for allowance. However, Appellant's argument is not deemed to be persuasive. Claims 1 and 14 are unpatentable under 35 U.S.C. 103(a) for the reason as explained above.

(I) Claims 8-10 are unpatentable under 35 U.S.C. 103(a) over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080), and further in view of Kataoka et al. (US Patent 6320115) and Kirchmann et al. (US 6073936)

Appellant argues claims 8-10 are in condition for allowance because claim 1 is in condition for allowance. However, Appellant's argument is not deemed to be persuasive. Claim 1 is unpatentable under 35 U.S.C. 103(a) for the reason as explained above.

(I) Claims 11-13 are unpatentable under 35 U.S.C. 103(a) over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080), and further in view of Kataoka et al. (US Patent 6320115), Kirchmann et al. (US Patent 6073936 and Kotani et al. (US Patent 5414030).

Appellant argues claims 11-13 are in condition for allowance because claim 1 is in condition for allowance. However, Appellant's argument is not deemed to be persuasive. Claim 1 is unpatentable under 35 U.S.C. 103(a) for the reason as explained above.

(I) Claim 18 is unpatentable under 35 U.S.C. 103(a) over Ishikawa et al. (US Patent 5509973) in view of Meadows (US Patent 3455080), and further in view of Stein et al. (US Patent 5071491).

Appellant argues claim 18 is in condition for allowance because the claim 1 is in condition for allowance. However, Appellant's argument is not deemed to be persuasive. Claim 1 is unpatentable under 35 U.S.C. 103(a) for the reason as explained above.

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Thanh-Truc Trinh/

Examiner, Art Unit 1725

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